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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/970,605	10/04/2001	Claudine Raibaut	TIF-31735	2694

23494 7590 11/18/2003

TEXAS INSTRUMENTS INCORPORATED
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EXAMINER	
THOMPSON, ANNETTE M	
ART UNIT	**PAPER NUMBER**
2825	

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/970,605	RAIBAUT ET AL.	
	Examiner	Art Unit	
	A. M. Thompson	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **27 August 2003** has been entered.

2. Applicants' Amendment has been examined and remarks considered. The specification is amended. Claims 1, 6, 8, and 13 are amended. Claims 16-19 are added. Claims 1-19 are pending.

3. Applicants' Response is not considered persuasive and the substantive rejections of the prior office action are incorporated herein.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Rejection of Claims 1-15

5. Claims 1-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Varadarajan et al., U.S. Patent 5,838,583. Varadarajan discloses a method and system for the optimized placement and routing of datapaths.

6. Pursuant to claim 1, which recites [a] method of controlling layouts of cells in an integrated circuit including datapath cells in a structured layout and other cells in an unstructured layout (see Abstract), comprising the steps of generating a description of a desired layout for the datapath cells (col. 3, ll. 38-50); transferring said description to a place and route tool to assign the desired layout to the datapath cells within the place and route tool (col. 3, ll. 38-50); assigning a fixed status to the datapath cells to prevent movement of the cells (see Fig. 2, #216, the cluster constraints; col. 7, line 64 to col. 8, line 3; see also col. 15, line 45 to col. 16, line 7); prior to routing the datapath cells (see also col. 3, ll. 25-28, wherein the placement occurs prior to routing), transferring desired criteria regarding the other cells to the place and route tool (col. 3, line 66 to col. 4, line 3); optimizing the layout based on said desired criteria, such that the datapath cells are unmoved as different layout iterations are performed on the other cells (col. 4, lines 4-28).

7. Pursuant to claim 2 further comprising the step of inputting information on said datapath and other cells to the place and route tool (col. 14, ll. 20-38).

8. Pursuant to claim 3, wherein said step of generating a description comprises the step of generating one or more matrices for defining placement of said datapath cells (Fig. 3, Fig. 14, col. 17, ll. 11-56).

9. Pursuant to claim 4, wherein the step of generating one or more matrices comprises the step of generating matrices having two or more matrices with interleaved rows (col. 16, line 56 to col. 17, line 56 discloses interleaving).

10. Pursuant to claim 5, wherein said step of generating one or more matrices comprises the step of generating matrices having two or more matrices with interleaved columns (col. 17, ll. 31-48; claim 2).

11. Pursuant to claim 6, wherein said step of generating matrices comprises the steps of generating matrices of slots ordered in a row and column format (Figs. 6a, 14a, 14b) leaving free space between slots for datapath cells in which ones of said other cells are placed (col. 14, lines 15-38).

12. Pursuant to claim 7, wherein said step of transferring desired criteria comprises the step of transferring timing criteria for the other cells to the place and route tool (col. 14, line 59 to col. 15, line 40).

13. Pursuant to claim 8 which recites an apparatus comprising a place and route tool (see Fig. 1, 2); a datapath generator for generating a description of a desired layout for the datapath cells (Figs. 1, 2), transferring said description to a place and route tool to assign the desired layout to the datapath cells within the place and route tool (col. 3, ll. 38-50), prior to routing the datapath cells (see also col. 3, ll. 25-28, wherein the placement occurs prior to routing), wherein a fixed status can be assigned to the datapath cells in said place and route tool to prevent movement of the cells during optimization of the layout of the other cells (col. 15, ll. 45-67 discloses use of the cluster constraints).

14. Pursuant to claim 9, wherein the place and route tool receives information on the datapath and other cells (col. 14, ll. 20-38).

15. Pursuant to claim 10, wherein the datapath generator generates a description of one or more matrices for defining placement of said datapath cells (Fig. 3, Fig. 14, col. 17, ll. 11-56).

16. Pursuant to claim 11, wherein said datapath generator generates a description of two or more matrices with interleaved rows (col. 16, line 56 to col. 17, line 56 discloses interleaving).

17. Pursuant to claim 12, wherein said datapath generator generates a description of two or more matrices with interleaved columns (col. 17, ll. 31-48; claim 2).

18. Pursuant to claim 13 wherein said datapath generates a description of a plurality of matrices of slots for datapath cells ordered in a row and column format (Figs. 6a, 14a, 14b) leaving free space between slots of said matrices in which ones of said other cells are placed (col. 14, lines 15-38).

19. Pursuant to claim 14, wherein said place and route tool may generate an optimized layout of said other cells based on desired constraints. (col. 14, line 59 to col. 15, line 40)

20. Pursuant to claim 15, wherein said desired constraints include timing constraints (col. 14, line 59 to col. 15, line 40).

21. Pursuant to claims 16-19, Varadarajan also teaches the limitations of leaving spaces and free spaces between selected columns and rows (see columns 16 and 17).

Conclusion

22. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to A.M. Thompson whose telephone number is (703) 305-

7441. The Examiner can usually be reached Monday thru Friday from 8:00 a.m. to 5:00 p.m.. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Matthew S. Smith, can be reached on (703) 308-1323.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956 or the Customer Service Center whose telephone number is (703) 306-3329.

23. Responses to this action should be mailed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306, (for all **OFFICIAL** communications intended for entry)

Hand-delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

A. M. THOMPSON
Master's Level Patent Examiner